

Identify Your Network Connections (ANSI/TIA/EIA 606-A Compliance): Labeling and Color Coding Adds Value to Cabling Environment

What is the 606 Standard?

You've been asked to upgrade a customer's network infrastructure. The streamlined design of the new network looks fantastic on paper. The cabling has been ordered, and there are already several reels sitting at the site waiting to be installed. The problem is that none of the existing infrastructure is labeled or color coded. The installation will take longer than expected because the job site is not 606-compliant.

To make moves, adds, and changes (MACs) easier and prevent this scenario from happening, ANSI/TIA/EIA instituted in 1993 the Administrative Standard for Commercial Telecommunications Infrastructure - more commonly referred to as the 606 standard. In 2002, the group issued a revised standard called 606-A. In short, the standard provides a common method of labeling all components of the telecommunications infrastructure to include the cables, telecommunications rooms, patch panels, pathways, and telecommunications outlets.

Benefits of 606 Compliance

First and foremost, implementation of the labeling scheme can offer a competitive edge in winning project contracts. The professional documentation and labeling allows the contractor to track the cabling work during the project. In addition, the labeling and color coding allow the end user to more easily move, add, or change the components after the installation is complete. The added value saves time and money in network maintenance costs.

Is Your Installation 606-Compliant?

Regardless of whether the cabling is installed in an existing, renovated, or new building, the standard requires that a unique alphanumeric identification code be created for every location, pathway, cable, and termination point. The actual format of the identifier is not mandated by the standard, but the format must be consistent and provide a unique number for each system element.

Because there are different levels of complexity in cable installations, the 606 standard provides different levels of requirements for compliance. The key to understanding these requirements is recognizing these four installation classes. The specific requirements of the 606 standard include:

Class	Requirements
1 Less than 100 Users Single TS	<ul style="list-style-type: none"> • Telecommunications Space Identifier • Horizontal Link Identifier • Telecom Main Grounding Busbar (TMGB) Identifier • Telecom Grounding Busbar (TGB) Identifier Note: Simple cable pathways should be intuitively understood
2 Hundreds of Users Multiple TS	<ul style="list-style-type: none"> • All Identifiers Required in Class 1 • Building Backbone Cable Identifier • Building Backbone Pair or Optical Fiber Identifier • Firestopping Location Identifier Optional: <ul style="list-style-type: none"> • Cable Pathway Administration

Class	Requirements
3 1000+ Users Campus Environment Multiple Buildings	<ul style="list-style-type: none"> • All Identifiers Required in Class 2 • Building Identifier • Campus Backbone Cable Identifier • Campus Backbone Pair or Optical Fiber Identifier Optional: <ul style="list-style-type: none"> • All Class 2 Optional Identifiers • Outside Plant Pathway Element Identifier • Campus Pathway or Element Identifier
4 1000+ Users Multiple Campus Locations	<ul style="list-style-type: none"> • All Identifiers Required in Class 3 • Campus or Site Identifier Optional: <ul style="list-style-type: none"> • All Class 3 Optional Identifiers • Inter-Campus Element Identifier

The standard also covers optional labeling of other critical elements such as conduit, cable trays, pull boxes, sleeves, and slots. As the installations increase in size and complexity, there are more elements that must be labeled. One of the advantages of the standard is that it is expandable. In other words, when you upgrade from a Class 2 to a Class 3 system, most of the labeling has already been done.

Color Coding

Color coding of termination fields can simplify the administration of the cabling system. Color coding is based on the 2-level hierarchical star configuration of backbone cabling. The general rule for color coding is that two ends of the same cable must be the same color. Cross-connections are generally made between termination fields of two different colors. The 606-A standard lists the elements that should be identified and the colors that should be used.

ANSI/TIA/EIA-606-A Recommended Colors	
Color	Identifies
Orange	Demarcation point (e.g., central office terminations)
Green	Network connections (e.g., network and auxiliary equipment)
Purple	Common equipment, private branch exchange (PBX), LANs
White	First-level backbone
Gray	Second-level backbone
Blue	Horizontal cable (horizontal connections to telecommunications outlets)
Brown	Inter-building backbone (campus cable terminations)
Yellow	Miscellaneous (e.g., auxiliary, alarms, security)
Red	Reserved for future use (also, key telephone systems)



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Maintaining Telecommunications Records

The 606 standard requires the maintenance of records for each cable, space, pathway, ground, termination hardware, and position. We recommend that you use either a spreadsheet (for less complex installations) or a database (for more complex installations) to record infrastructure data. In addition to being able to print labels from the recorded data, the software should have some kind of reporting capability.

There are several industry-specific label printing software programs available to convert data in an Excel® database to attachable labels. The installer can provide significant added value to the project by printing thousands of labels in a matter of minutes and deploying the labels at the site. The 606-A standard requires labels to be a size, color, and contrast that is easy to read. The alpha-numerical identifiers must also be printed by a "mechanical device" (not written by hand) on labels that have the same or greater durability as the component.

With the growing emphasis on standards in the complex networking environment of Information Technology (IT), it is essential to provide not only a standards-compliant installation, but also standards-compliant documentation. Identifying the network is a key component of quality service and provides a significant competitive edge in obtaining jobs.



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